



**HKX* Series Heater
and
BKX* Series Blower
for EHX*E Series
Explosion-Proof
Camera Enclosure**

**Installation/
Operation Manual**

C1495M-B (10/03)

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IMPORTANT SAFEGUARDS AND WARNINGS

Prior to installation and use of this product, the following WARNINGS should be observed.

1. Installation and servicing should only be done by qualified service personnel and conform to all local codes.
2. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X, 6 or 6P enclosure, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.
3. Only use replacement parts recommended by Pelco.
4. For marine applications, the installation shall be in accordance with the Electrical Engineering Regulations of the USCG, Subpart J, C.G. 259 (46 CFR Parts 110-113).

The product and/or manual may bear the following marks:



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.

DESCRIPTION

The heater and blower kits described in this manual are intended to work with the EHX*E Series of non-pressurized, explosion-proof camera enclosures.

When installing heater and blower kits in EHX*E Series explosion-proof camera enclosures, the maximum camera and lens sizes are reduced depending on the size of the blower, heater brackets, and PC board(s). Before installing the heater and blower kit, verify that the camera currently installed in the enclosure will fit in the enclosure after installation of the accessories (refer to the *Specifications* section in this manual).

BLOWER AND HEATER KITS

NOTE: Blower kits are not thermostatically controlled.

BKX4000	Continuously run blower kit, 120 VAC, 3.8 watts, 10 cfm @ 60 Hz. For use with EHX4E enclosure only.
BKX4024	Continuously run blower kit, 24 VAC (AC rectified), 1.92 watts, 19.4 cfm. For use with EHX4E enclosure only. (CE)
BKX6000	Continuously run blower kit, 120 VAC, 3.8 watts, 10 cfm @ 60 Hz. For use with EHX6E, EHX6E-16, EHX8E, EHX10E enclosures.
BKX6000/220	Continuously run blower kit, 230 VAC, 9.6 watts, 8 cfm @ 50 Hz. For use with EHX6E, EHX6E-16, EHX8E, EHX10E enclosures. (CE)
BKX6024	Continuously run blower kit, 24 VAC (AC rectified), 1.92 watts, 19.4 cfm. For use with EHX6E, EHX6E-16, EHX8E, EHX10E enclosures. (CE)
HKX4-1	Thermostatically controlled heater kit, 120 VAC, 40 watts, for EHX4E enclosure only.
HKX4-2	Same as HKX4-1 except 24 VAC. (CE)
HKX4-3	Same as HKX4-1 except 230 VAC. (CE)
HKX6-1	Thermostatically controlled heater kit, 120 VAC, 80 watts, for EHX6E and EHX6E-16 enclosures only.
HKX6-2	Same as HKX6-1 except 24 VAC. (CE)
HKX6-3	Same as HKX6-1 except 230 VAC. (CE)
HKX8/10-1	Thermostatically controlled heater kit, 120 VAC, 100 watts, for EHX8E and EHX10E enclosures only.
HKX8/10-2	Same as HKX8/10-1 except 24 VAC, 40 watts. (CE)
HKX8/10-3	Same as HKX8/10-1 except 230 VAC, 100 watts. (CE)

INSTALLATION

HEATER KIT INSTALLATION



WARNING: Do not remove the front cover. If you do, Pelco cannot be held responsible for the loss of explosion-proof rating, UL listing, or ability of the enclosure to contain an explosion.

The following items are supplied:

Assembly, including heater bracket, PC board bracket, heaters, and PC board Hardware to attach the heater and PC board brackets to the enclosure:

	HKX4	HKX6	HKX8/10
3/8-inch screws	6	4	4
Nuts	2	2	2
Internal tooth lock washers	6	4	4

Heater kits are partially assembled. If you are installing both heater and blower kits, see the instructions in the *Heater Kit and Blower Kit Installation* section. Do the following to install any heater kit:

1. Disconnect all sources of power from the enclosure.
2. Remove the enclosure's rear plate with a 5 mm Allen wrench.
3. Remove the camera sled and camera from the enclosure.
 - a. Use a 3/16-inch Allen wrench to loosen the set screw that holds the camera sled in place.
 - b. Partially pull the camera sled out; disconnect the camera's power wires and video cable.
 - c. Remove the camera sled from the enclosure.
 - d. Remove the camera from the sled.
4. Disconnect the heater wires from the PC board.
5. Attach the PC board bracket to the enclosure's rear plate using the hardware provided (refer to Figure 1 or 2).
6. Attach the heater bracket to the front of the camera sled using the hardware provided (refer to Figure 3 or 4).
7. Reinstall the camera and camera sled, but do not tighten the set screw that holds the sled in place.
8. Attach the video cable to the camera.
9. Reconnect the heater wires to the PC board (refer to Figure 8).
10. If the camera uses a **different** voltage than the heater, reconnect the power wires to the camera. If the camera uses the **same** voltage as the heater, proceed to the next step.
11. Bring power wires through the rear plate and connect the wires to the PC board (refer to Figure 8). If you are installing the HKX4-2, HKX6-2, or HKX8/10-2 heater kit, refer to Table A, 24 VAC Wiring Distances. If the camera uses the same voltage as the heater, the camera power consumption must be considered when determining the wire gauge. Table A does **not** include camera power because of the many variations.
12. Tighten the set screw that holds the camera sled in place.
13. Reinstall the rear plate of the enclosure. Apply Loctite® 222 low-strength thread locker (not supplied) to the screws to prevent them from seizing.

BLOWER KIT INSTALLATION

NOTE: *The 24 VAC and the 230 VAC versions use additional components that should be secured to the fan bracket with the integrated clip in the bracket.*

The following items are supplied:

Assembly, including blower and bracket.

Hardware to attach the blower, bracket, and PC board (24 VAC only) to the enclosure:

	BKX4000	BKX4024	BKX6000/220
3/8-inch screws	2	2	2
Internal tooth lock washers	2	2	2
Nuts	0	0	2
Butt splices	2	2	2

Blower kits are partially assembled. If you are installing both heater and blower kits, see the instructions in *Heater Kit and Blower Kit Installation* section. Do the following to install any blower kit:

1. Disconnect all sources of power from the enclosure.
2. Remove the enclosure's rear plate with a 5 mm Allen wrench.
3. Attach the blower assembly to the enclosure's rear plate using the hardware provided (refer to Figure 5, 6, or 7).
4. Bring power wires through the rear plate and connect the AC input wiring to the blower wires with the butt splices that are provided (refer to Figure 8).
5. Reinstall the rear plate of the enclosure. Apply Loctite® 222 low-strength thread locker (not supplied) to the screws to prevent them from seizing.

HEATER KIT AND BLOWER KIT INSTALLATION

Do the following to install both the heater and blower kits:

1. Disconnect all sources of power from the enclosure.
2. Remove the enclosure's rear plate with a 5 mm Allen wrench.
3. Remove the camera sled and camera from the enclosure.
 - a. Use a 3/16-inch Allen wrench to loosen the set screw that holds the camera sled in place.
 - b. Partially pull the camera sled out; disconnect the camera's power wires and video cable.
 - c. Remove the camera sled from the enclosure.
 - d. Remove the camera from the sled.
4. Disconnect the heater wires from the PC board.
5. Remove the blower from the bracket; keep the hardware attaching the blower to the bracket and discard the bracket.
6. Attach the blower to the bracket on which the PC board for the heater is attached.
7. Attach the PC board and blower bracket to the enclosure's rear cover the hardware provided (refer to Figures 1 and 2).
8. Attach the heater bracket to the front of the camera sled using the hardware provided (refer to Figures 3 and 4).
9. Reinstall the camera and sled; do not tighten the set screw that holds the sled in place.
10. Attach the video cable to the camera.
11. Reconnect the heater wires to the PC board (refer to Figure 8).
12. If the camera uses a **different** voltage than the heater, reconnect the power wires to the camera. If the camera uses the **same** voltage as the heater, proceed to the next step.
13. Bring power wires through the rear plate and connect the wires to the PC board (refer to Figure 8). If you are installing the HKX4-2, HKX6-2, or HKX8/10-2 heater kit, refer to Table A, 24 VAC Wiring Distances. If the camera uses the same voltage as the heater, the camera power consumption must be considered when determining the wire gauge. Table A does **not** include camera power because of the many variations.
14. Tighten the set screw that holds the camera sled in place.
15. Reinstall the rear plate of the enclosure. Apply Loctite® 222 low-strength thread locker (not supplied) to the screws to prevent them from seizing.

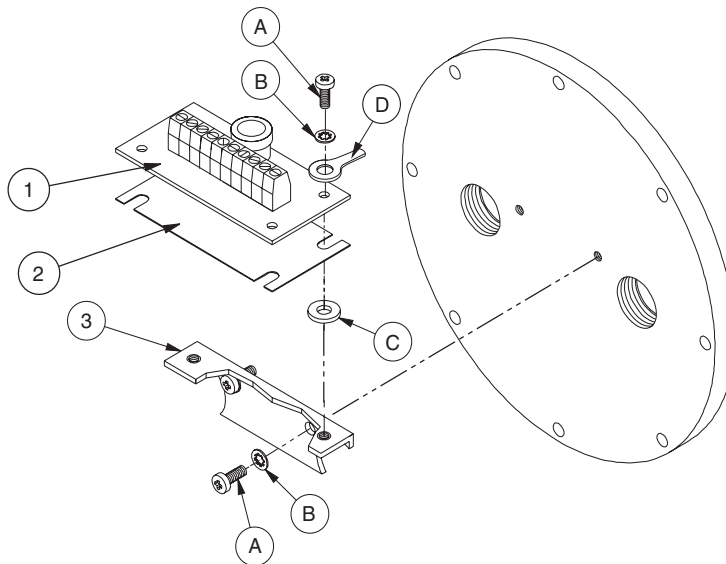


Figure 1. HKX4 PC Board Installation

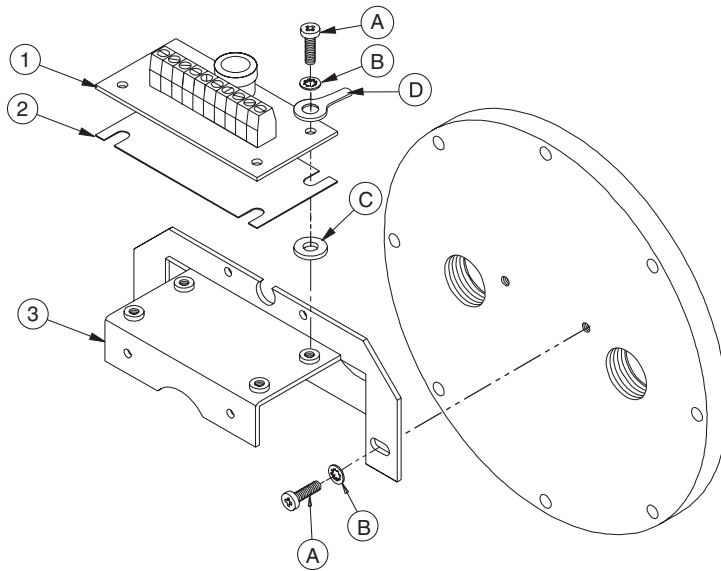


Figure 2. HKX6, HKX8/10 PC Board Installation

Table A. HKX4, HKX6, HKX8/10 Series PC Board Assembly Parts List

Item	Qty	Description	Part Number
1	1	PC board	PCB9000300ASSY
2	1	Insulator	BK400010000
3	1	PC board bracket HKX4 HKX6, HKX8/10	E7044012COMP BK40004000COMP
A	4	Screw, 6-32 x 3/8-inch HKX4	ZH6-32X.375SPP
B	6	Internal tooth lock washer, #6 HKX6, HKX8/10	ZH6LWSIS
C	4	Nylon washer HKX4	ZH200X437X62N
D	6	Nylon washer HKX6, HKX8/10	
D	1	Brass solder lug (for grounding circuit board)	570010004

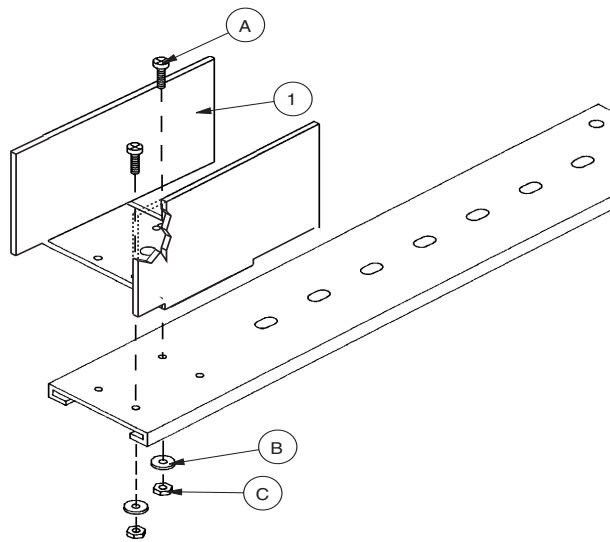


Figure 3. EHX4E Heater Bracket Installation

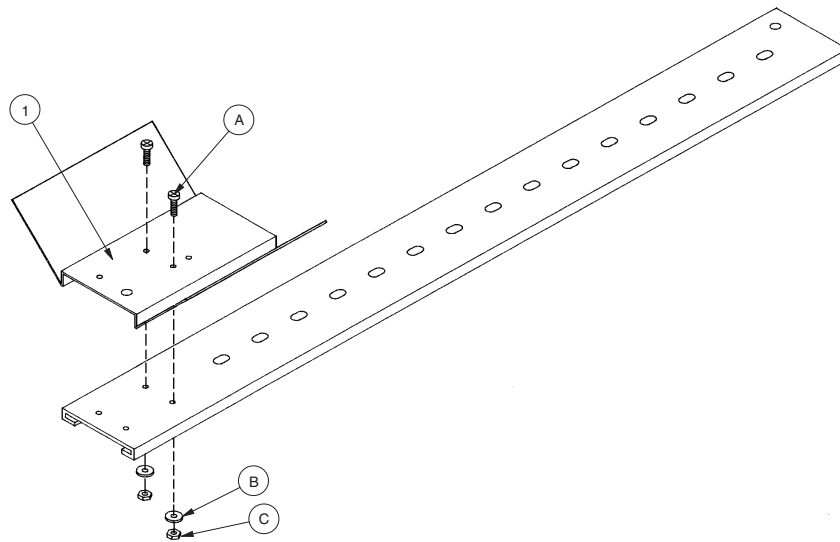


Figure 4. EHX6E/8E/10E Heater Bracket Installation

Table B. HKX4, HKX6, HKX8/10 Series Heater Assembly Parts List

Item	Qty	Description	Part Number
1	1	Heater Bracket HKX4 Series HKX6, HKX8/10 Series	E7044013COMP E700H4010COMP
N/S*	2	Heaters HKX4-1, 120 VAC HKX4-2, 24 VAC HKX4-3, 230 VAC HKX6-1, 120 VAC HKX6-2, 24 VAC HKX6-3, 230 VAC HKX8/10-1, 120 VAC HKX8/10-2, 24 VAC HKX8/10-3, 230 VAC	HT71-04040100 HT72-04040100 HT73-04040100 HT07-0810-0402 HT07-0820-0402 HT07-0830-0402 HTR50120 HTR20024 HTR40220
A	2	Screw, 6-32 x 3/8-inch	ZH6-32X.375SPP
B	2	Internal tooth lock washer, #6	ZH6LWSIS
C	2	Nut, 6-32, hex	ZH6-32NUTSH

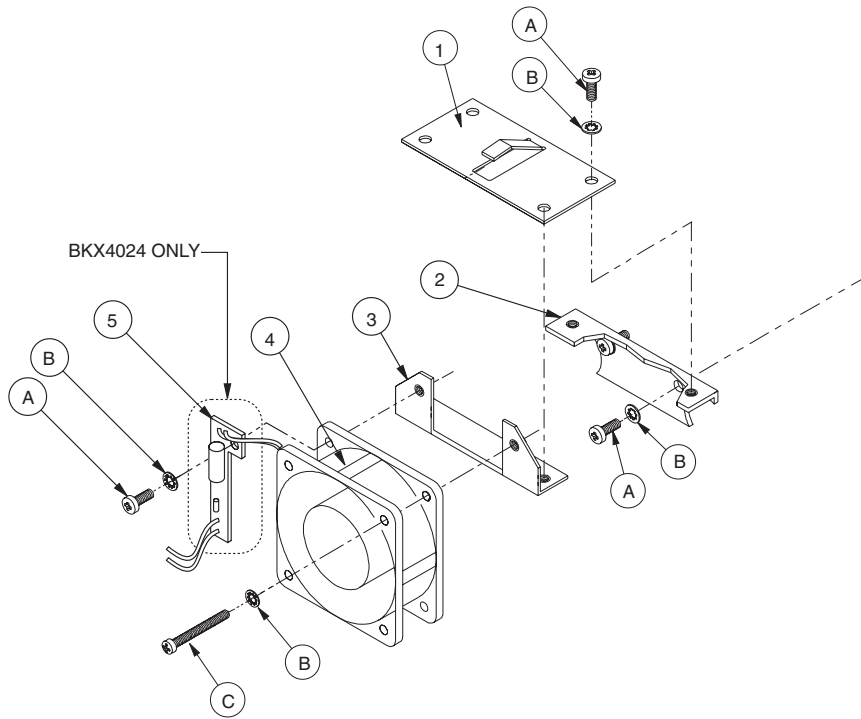


Figure 5. BZX4000, BZX4024 Blower Assembly Installation

Table C. BZX4000, BZX4024 Blower Assembly Parts List

Item	Qty	Description	Part Number
1	1	Blower bracket	BK7044002COMP
2	1	Blower bracket	E7044012COMP
3	1	Blower bracket	BK7044001COMP
4	1	Blower BZX4000, 120 VAC BZX4024, 24 VDC rectified	MM750010003 ED210005
5*	1	PC Board	PCB9000277ASSY
A	6 7	Screw, 6-32 x 3/8-inch BZX4000 BZX4024	ZH6-32X.375SPP
B	7 8	Internal tooth lock washer, #6 BZX4000 BZX4024	ZH6LWSIS
C	1	Screw, 6-32 x 1 1/2-inch	ZH6-32X1.50SPS

*BZX4024 only

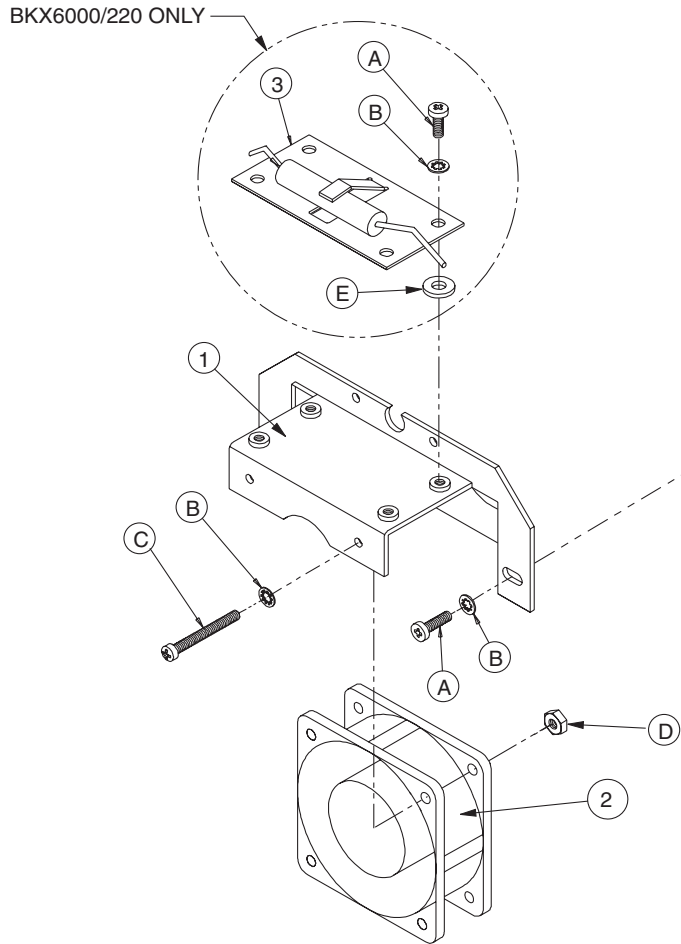


Figure 6. BZX6000, BZX6000/220 Blower Assembly Installation

Table D. BZX6000, BZX6000/220 Blower Assembly Parts List

Item	Qty	Description	Part Number
1	1	Blower bracket	BK40004000COMP
2	1	Blower	MM750010003
3*	1	Blower bracket	BK7044002COMP
A	6	Screw, 6-32 x 3/8-inch	ZH6-32X.375SPP
B	8	Internal tooth lock washer, #6	ZH6LWSIS
C	2	Screw, 6-32 x 1 1/2-inch	ZH6-32X1.50SPS
D	2	Nut, 6-32, hex	ZH6-32NUTSH
E	4	Nylon washer	ZH200X437X62N

*BZX6000/220 only

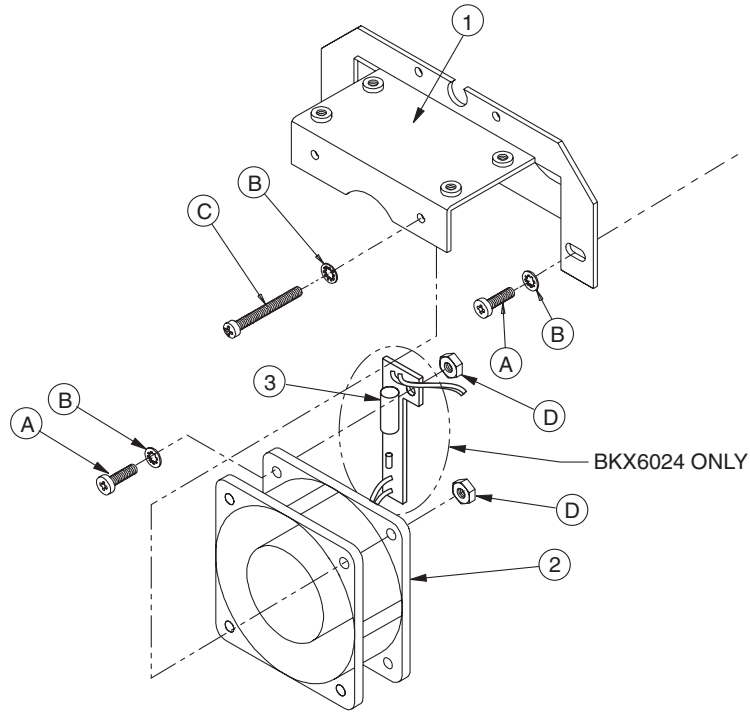
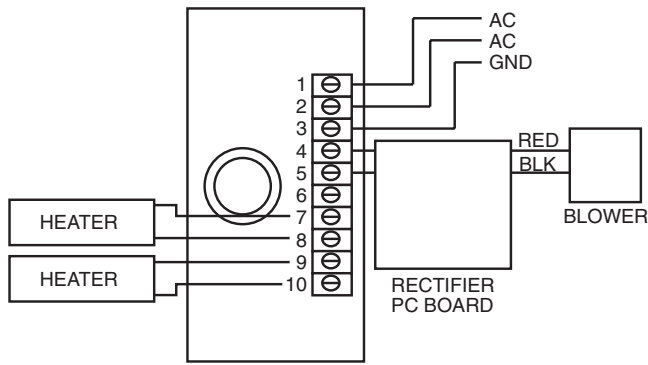


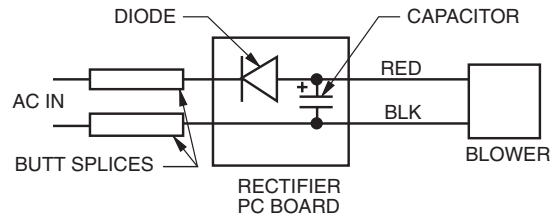
Figure 7. BKX6024 Blower Assembly Installation

Table E. BKX6024 Blower Assembly Parts List

Item	Qty	Description	Part Number
1	1	Blower bracket	BK40004000COMP
2	1	Blower, 24 VDC rectified	ED210005
3	1	PC Board	PCB9000277ASSY
A	3	Screw, 6-32 x 3/8-inch	ZH6-32X.375SPP
B	4	Internal tooth lock washer, #6	ZH6LWSIS
C	1	Screw, 6-32 x 1 1/2-inch	ZH6-32X1.50SPS
D	2	Nut, 6-32, hex	ZH6-32NUTSH

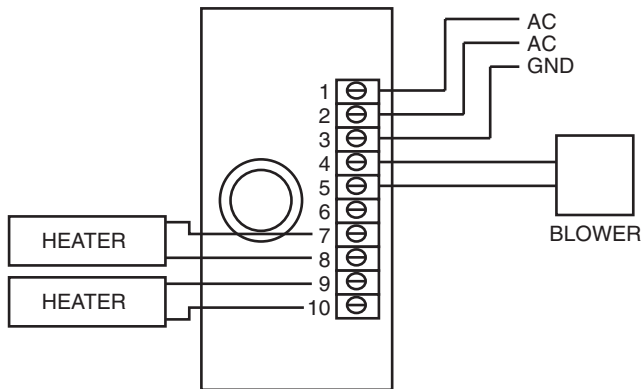


HEATER ONLY OR HEATER AND BLOWER

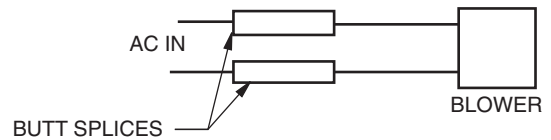


BLOWER ONLY

24 VAC WIRING DIAGRAM

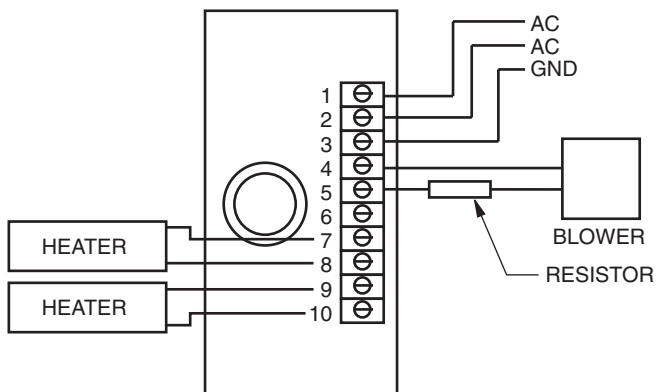


HEATER ONLY OR HEATER AND BLOWER

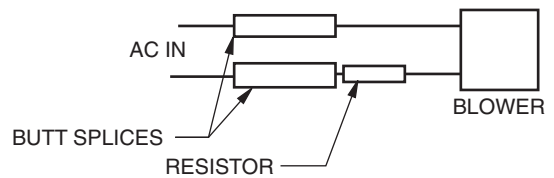


BLOWER ONLY

120 VAC WIRING DIAGRAM



HEATER ONLY OR HEATER AND BLOWER



BLOWER ONLY

230 VAC WIRING DIAGRAM

Figure 8. Heater/Blower Kit Wiring Diagram

Table F. Enclosure Accessory Wiring Distances



CAUTION: When a single power source is used for both the camera and accessories, the camera power consumption must be considered when determining the wire gauge. However, the following chart does not include camera power because of the many variations.

Model Number	Input Voltage	Power Consumption	Cable Size	Cable Distance
BKX4000 or BKX6000	120 VAC	4 watts	18 AWG 16 AWG 14 AWG	27,108 feet (8,262 m) 43,062 feet (13,125 m) 68,441 feet (20,860 m)
BKX4024 or BKX6024	24 VAC	2 watts	18 AWG 16 AWG 14 AWG	2,169 feet (661 m) 3,445 feet (1,050 m) 5,475 feet (1,669 m)
BKX6000/220	230 VAC	10 watts	18 AWG 16 AWG 14 AWG	36,446 feet (11,108 m) 57,895 feet (17,645 m) 92,015 feet (28,045 m)
HKX4-1	120 VAC	40 watts	18 AWG 16 AWG 14 AWG	2,711 feet (826 m) 4,306 feet (1,312 m) 6,844 feet (2,086 m)
HKX4-2	24 VAC	40 watts	18 AWG 16 AWG 14 AWG	108 feet (33 m) 172 feet (52 m) 274 feet (83 m)
HKX4-3	230 VAC	40 watts	18 AWG 16 AWG 14 AWG	9,111 feet (2,777 m) 14,474 feet (4,411 m) 23,004 feet (7,011 m)
HKX6-1	120 VAC	80 watts	18 AWG 16 AWG 14 AWG	1,355 feet (413 m) 2,153 feet (656 m) 3,422 feet (1,043 m)
HKX6-2	24 VAC	80 watts	18 AWG 16 AWG 14 AWG	54 feet (17 m) 86 feet (26 m) 137 feet (42 m)
HKX6-3	230 VAC	80 watts	18 AWG 16 AWG 14 AWG	4,556 feet (1,389 m) 7,237 feet (2,206 m) 11,502 feet (3,506 m)
HKX8/10-1	120 VAC	100 watts	18 AWG 16 AWG 14 AWG	1,128 feet (343 m) 1,791 feet (545 m) 2,857 feet (870 m)
HKX8/10-2	24 VAC	40 watts	18 AWG 16 AWG 14 AWG	112 feet (34 m) 179 feet (54 m) 285 feet (86 m)
HKX8/10-3	230 VAC	100 watts	18 AWG 16 AWG 14 AWG	4,145 feet (1,263 m) 6,579 feet (2,005 m) 10,496 feet (3,199 m)

OPERATION

Enclosure heaters turn on at 40°F (4°C) and turn off at 60°F (16°C).

Enclosure blower fans operate continuously.

SPECIFICATIONS

MAXIMUM CAMERA AND LENS SIZE

(With Heater Only)

EHX4E (only) 1.75 in. H x 3.375 in. W x 10.375 in. L (4.45 x 8.57 x 26.35 cm)
10.38 in. L x 3.0 in. diameter (26.36 x 7.62 cm)

(With Blower Only or Blower and Heater)

EHX4E 1.75 in. H x 3.375 in. W x 9 in. L (4.45 x 8.57 x 22.86 cm)
9 in. L x 3.0 in. diameter (22.86 x 7.62 cm)
EHX6E 3.75 in. H x 4.375 in. W x 22.25 in. L (9.53 x 11.11 x 56.52 cm)
22.25 in. L x 5.0 in. diameter (56.52 x 12.70 cm)
EHX6E-16 3.75 in. H x 4.375 in. W x 14.25 in. L (9.53 x 11.11 x 36.20 cm)
14.25 in. L x 5.0 in. diameter (36.20 x 12.70 cm)
EHX8E 5.75 in. H x 5.125 in. W x 22.25 in. L (14.60 x 13.02 x 56.52 cm)
22.25 in. L x 7.3 in. diameter (56.52 x 18.54 cm)
EHX10E 7.75 in. H x 5.75 in. W x 22.25 in. L (19.69 x 14.61 x 56.52 cm)
22.25 in. L x 9.0 in. diameter (56.52 x 22.90 cm)

(Design and product specifications subject to change without notice.)

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on FT/FR8000 Series fiber optic products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra®, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit® and WW5700 Series window wiper (excluding wiper blades).
- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
Phone: 650-737-1700
Fax: 650-737-0933

REVISION HISTORY

Manual #	Date	Comments
C1495M	9/98	Original version.
C1495M-A	7/99	Moved certifications to model description. Revised heater kit and blower kit installation instruction, wiring diagrams, exploded assembly diagrams, and parts lists. Added specifications.
C1495M-B	10/03	Added solder lug to Figures 1 and 2 and Table A per ECO #03-8634.